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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/676,152 | 09/29/2000 | Janos Enderlein | 450117-02811 | 9982 |
| 20999 | 7590 | 02/15/2006 | EXAMINER | |
| FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151 | | | KIM, KEVIN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2638 | |

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/676,152

Applicant(s)

ENDERLEIN ET AL.

Examiner

Kevin Y. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 54-58, 62-68 is/are allowed.
- 6) ☒ Claim(s) 40, 41, 46, 47, 49, 51, 59, 60, 69 and 70 is/are rejected.
- 7) ☒ Claim(s) 42-45, 48, 50, 52, 53, 61 and 71 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12-02-2005 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 40, 41, 46, 47, 49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melsa et al (US 6,108,349 previously cited) in view of Han (US 6,133,964).

Claims 40, 41, 46, 47 and 49.

Melsa et al discloses a OFDM receiver (see Fig.7) comprising a plurality of analog devices, i.e., a multiplier 155 and a SAW filter 165, performing an analog multiplication and an analog convolution on an analog signal, wherein the analog multiplication provides RF to IF conversion. Also see col. 8, lines 40-61. It should be noted that the SAW filter is considered to perform a convolution operation since a same SAW filter is disclosed as performing the same function by applicant at page 8, last paragraph of the present application. Melsa et al, however, is different from the claimed invention in that it down-converts the IF signal before

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analog/digital conversion while the claimed invention requires an analog/digital conversion of the IF analog signal “without further down-conversion.”

Han teaches an A/D converter (210) for converting the IF analog to digital baseband signal instead of an analog demodulator for the purpose of digitizing the entire signal processing of a receiver such that via the use of a single ASIC chip a low cost and uniform performance could be ensured. See col.3, lines 1-6.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to provide an A/D converter for digital demodulating the IF signal of Melsa et al for the purpose of minimizing the receiver size and providing a low cost and uniform performance, as taught by Han.

Claim 51.

Though not shown, an antenna and an amplifier and preprocessing are inherent in an RF receiver such as disclosed by Melsa et al. See also Han showing an antenna and an amplifier.

4. Claims 59, 60, 69 and 70 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones, IV et al (US 6,611,551 previously cited).

Jones, IV et al disclose an OFDM transmitter, see Fig.1, comprising, a plurality of analog devices (RF components section 108 that includes multiplication and convolution). The transmitter filter 106 performs an analog convolution on an analog signal and the RF components section 108 performs an analog multiplication and provides an IF to RF up-conversion. See col. 3, lines 44-49.

Allowable Subject Matter

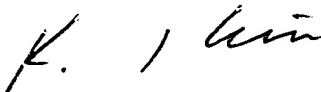
5. Claims 42-45, 48, 50, 52, 53, 61 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 54-58, 62-68 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**KEVIN KIM
PATENT EXAMINER**